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XII.—Notes on Indian Rhynchota. No. 4.—By E. T. ATKINSON, B. A.

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Family FULGORIDÆ, Leach.

Edin. Ency. ix (1817); Westwood, Mod. Class. Ins. ii, p. 427 (1840); Fieber, Verh. Zool.-Bot. Gess. Wien, xvi, p. 497 (1866):—*Fulgorellæ*, Latr. Gen. iii, p. 163 (1807); Spinola, A. S. E. F. (1 sér.) viii, p. 133, 202 (1839):—*Fulgorina*, Burm., Handb. Ent. ii (i) p. 102, 144 (1835):—*Fulgorida*, Stål, Hem. Afric. iv, p. 128 (1866).

Two ocelli, rarely three or none, one on each gena; third, when present, placed on the apex of the frons: genæ reflexed, very often separated from the frons by a ridge: tegmina at the base with a tegula, which is seldom wanting, hidden: anterior coxæ inserted near the sides of the body, very often elongate; last pair, transverse, contiguous, extended to the lateral margins of the body (*Stål*).

Subfamily FULGORINA, Stål.

Fulgorides, Am. & Serv., Hist. Nat. Ins. Hém. p. 488 (1843). *Fulgorida*, Stål, Hem. Afric. iv, p. 129 (1866), Stettin Ent. Zeit. xxxi, p. 255, 282 (1870); *Fulgorina*, Stål, Ofvers. K. V.-A., Förh. p. 740 (1870).

Anal area of wings reticulated; the ridge separating the frons from the genæ is continued in the sides of the clypeus (*Stål*).

Genus FULGORA, Linnæus, Stål.

Fulgora, Stål, Hem. Afric. iv, p. 133 (1866); *Hotinus*, Am. & Serv., Hist. Nat. Ins. Hém. p. 490 (1843); Walker, List Hom. B. M. ii, p. 264 (1851).

Vertex much broader than the eyes: head furnished with a long process, rounded or subtetragonal: genæ truncated before the eyes: frons slightly sinuated at the apex, furnished with 2—3 longitudinal ridges: feet slender: scutellum slightly carinated; cephalic process more or less curved (*Stål*).

A. Section with (when dead) orange wings.

1. *FULGORA CANDELARIA*, Linnæus.

Cicada candelaria, Linn., *Acta Holm.* p. 63, t. 1, f. 5, 6 (1746); *Roesel von Rosenhof*, *Ins. Belust.* 2, *Gryll.* p. 189, t. 30 (1749); *Sulzer*, *Ins.* t. 10, f. 62 (1761).

Laternaria candelaria, Linn. *Mus. Lud. Ulr.* p. 153 (1764).

Fulgora candelaria, Linn. *Syst. Nat.* i (2) p. 70 (1766); *De Géer*, *Cigale chinoise porte-lanterne*, *Ins.* iii, p. 197 (1773); *Fabricius*, *Syst. Ent.*, p. 673 (1775); *Spec. Ins.* ii, p. 313 (1781); *Gmelin*, *ed. Syst. Nat.* i (4) p. 2089 (1782); *Fabr. Mant. Ins.* ii, p. 260. (1787); *Ent. Syst.* iv, p. 2 (1798); *Syst. Rhynch.* p. 2 (1803); *Olivier*, *Enc. Méth.* vi, pp. 568, 593, t. 109, f. 3 (1790); *Stoll*, *Cigales*, (*Cigale Chinoise*), p. 44, t. 10, f. 46 A. (1788); *Burmeister*, *Handb. Ent.* ii (i) p. 168 (1835); *Westwood* in *Donovan's Insects China*, t. 14, (1842); *Trans. Linn. Soc.* XVIII, p. 138 (1841); *Blanchard*, *Hist. Nat. Ins. Hém.* t. 12, f. 1 (1840-41); *Butler*, *P. Z. S.* p. 97 (1874).

Flata candelaria, *Germar*, *Mag.* iii, p. 189 (1818).

Pyrops candelaria, *Spinola*, *A. S. E. F.* viii, p. 238 (1839).

Hotinus candelarius, *Am. & Serv.*, *Hist. Nat. Ins. Hém.* p. 490 (1843); *Walker*, *List. Hom. B. M.* ii, p. 265 (1851).

Head produced in a horn, as long as the body, subulate, ascending, obtuse, somewhat compressed, subangulate, red, sprinkled with milk-white spots: eyes subglobose, a globose pellucid dot beneath the eyes: antennæ beneath the eye, very short, two-jointed, lower joint cylindrical, upper subglobose, fuscous, ending in a very small seta: thorax testaceous, like the three-cornered scutellum; abdomen, above fulvous, beneath black, with luteous margins: tegmina fuscous, reticulated green and adorned with various luteous spots margined with whitish of which the first band is transverse and the second cruciform, the rest round: wings luteous, broadly black towards the apex: feet flavescent, first and second tibiæ black, third denticulate (*Linn. M. L. U.*). Long 40—45; cephalic process 15—20 millims.

Reported from China, Cambodia, India. The Indian Museum possesses specimens from Sikkim, Assam. The next three appear to be little more than local varieties of *F. candelaria*.

2. *FULGORA BREVIROSTRIS*, Butler.

Fulgora brevirostris, *Butler*, *Proc. Zool. Soc.* p. 97, 1 t. xv, f. 1, (1874).

Closely allied to *F. candelaria*; tegmina black, with the veins and spots bright ochraceous, disposed as in *F. candelaria*; wings orange-ochreous, the apical third black; cephalic process short, curved, ascend-

ing, testaceous with paler spots : prothorax much compressed in front, with a central longitudinal ridge and two strongly impressed black punctures, testaceous, with a black lateral patch ; the rest of the body, luteous above, mesothorax maculated with black ; abdomen below black, the margins of the segments testaceous ; legs pitchy ; the coxæ and the femora of the last pair, dirty testaceous (*Butler*). Body long with cephalic process 29—30 ; cephalic process 13 and exp. teg. 63 millims.

Reported from India, Penang : the Indian Museum possesses a specimen from Sikkim (?).

3. *FULGORA VIRIDIROSTRIS*, Westwood.

Fulgora (Hotina) viridirostris, Westwood, Cab. Or. Ent. p. 8, t. 3, f. 4, (1848).

Hotinus viridirostris, Walker, Cat. Hom. B. M. ii, p. 265 (1851).

Fulgora viridirostris, Butler, P. Z. S. p. 98 (1874).

Cephalic process about half as long again as the thorax with the apex turned up and acuminate, of a dark green colour with white irrorations ; body fulvous, the thorax spotted with black ; feet black with the four anterior femora pitchy and the two hind femora, fulvous : tegmina and wings marked as in *F. candelaria* (*Westw.*). Body with cephalic process long, 32—38 ; exp. teg. 63—76 millims.

Reported from Assam : the Indian Museum possesses specimens from Sibságar (Assam) and Sikkim, the latter, as a rule, smaller with the cephalic process of a lighter green and the white irrorations thereon hardly visible.

4. *FULGORA SPINOLÆ*, Westwood.

Fulgora (Pyrops) spinolæ, Westwood, A. M. N. H., ix, p. 118 (1842).

Fulgora (Hotina) spinolæ, Westwood, Cab. Or. Ent. p. 73, t. 36, f. 1 (1848).

Hotinus spinolæ, Walker, Cat. Hom. B. M. ii, p. 266 (1851).

Fulgora spinolæ, Butler, P. Z. S. p. 98 (1874).

Cephalic process as long as the body with the apex turning up, above black, beneath luteous : body fulvous : anterior margin and the middle of the pronotum, a broad median stripe on the mesonotum, two dots and two oblique, lateral streaks, all black : tegmina brown, veins fulvous ; three straight, transverse, bands before the middle and six or seven sub-apical circular spots (of which some form an interrupted maculate band) palely fuscous ; wings, fulvous, black at the apex (*Westw.*). Body with cephalic process long 44 ; exp. teg. 82 millims.

Reported from Mysore, Assam, Silhat : the Indian Museum possesses specimens from Shillong, Nága hills, Silhat, Sibságar, and Sikkim.

5. *FULGORA LATHBURI*, Kirby.

Fulgora lathburii, Kirby, Trans. Linn. Soc. xii, p. 450 (1818) ; Westwood, *ibid.*, xviii, p. 139 (1841) ; White, A. M. N. H. xiv, p. 425 (1844) ; Guérin, Icon. Règne Au. Ins. t. 58, f. 2 (1830-34) ; Butler, P. Z. S. p. 98 (1874).

Flata lathburii, Germar, Thon's Archiv. ii, (2), p. 46 (1830).

Hotinus lathburii, Walker, Cat. Hom. B. M. ii, p. 266 (1851).

Allied to *F. candelaria*, Linn., cephalic process ascending, above black, apex red: dorsum of thorax black: tegmina blackish-green, sprinkled with many ocellate spots having a luteous pupil and a white iris; some white dots on the interior margin: abdomen pallid, spotted black: wings luteous, black at the apex (*Kirby*). Long, 38 millims.

Reported from China, Silhat.

To this section also belong:—

F. cyanirostris, Guérin, A. S. E. F. (2 Ser.) iii, Bull. Ent. p. xovi, (1845). Java.

F. nigrirostris, Walker, Ins. Saund. p. 29 (1858). Siam.

F. philippina, Stål, Ofvers. K. V.-A., Förh. p. 740 (1870). Philippines.

F. æruginosa, Stål, l. c. p. 741 (1870). Philippines.

F. lauta, Stål, l. c. p. 741 (1870). Philippines.

Sec. 2. Species with whitish or white and red wings.

6. FULGORA CONNECTENS, n. sp.

The coloration of the tegmina connects this fine species with the first section and that of the wings places it in this section. Cephalic process much longer than the body, ascending, much recurved, somewhat sabreshaped, much compressed, much flattened at the apex, black above, greenish-fulvous beneath, signs of faint white irrorations above: thorax black, with a broad, transverse, fulvous band concolorous with the intermediate coxæ and the clypeus: abdomen above sordid fulvescent, beneath black with each segment broadly bordered posteriorly with sordid fulvescent; anus black: feet black, coxæ, intermediate femora above, and entire posterior femora, brown: tegmina black, veins greenish; the basal half with three transverse fulvous bands, of which the third from the base becomes a confluent row of four round fulvous spots, ocellated paler, beyond this in the apical half comes a transverse row formed of two large fulvous ocellated confluent spots near the costal margin and a smaller spot not ocellated near the interior margin, then another interrupted transverse row commencing with four ocellated confluent spots at the costal margin and ending with two confluent ocellated spots at the internal margin; two large and two small fulvous spots not ocellated in the apical fourth: wings white, apex black, with three confluent white spots and two smaller within the black part. Body long to the eyes, 22; cephalic process long from eyes to tip, 30: exp. teg. 80 millims.

The Indian Museum possesses a specimen from Tenasserim.

7. FULGORA CLAVATA, Westwood.

Fulgora clavata, Westwood, Trans. Linn. Soc. xviii, p. 139, t. 12, f. 1 (1841); Cab. Or. Ent. p. 7, t. 3, f. 1 (1848); Butler, P. Z. S. p. 98 (1874).

Hotinus clavatus, Walker, Cat. Hom. B. M. ii, p. 267 (1851).

Cephalic process and head piceous, covered with a white-farinose substance, as long as half the body, gradually attenuated from the base, its dorsum tricarinate and apex turning upwards and ending in a knob or ball sub-rounded, sub-pellucid, and broadly testaceous: thorax luteous, pronotum with two minute discoidal, black, dots; mesonotum with four basal and two other oblique lateral spots: abdomen beneath fulvous, above obscure, dotted with a white farinose substance, apices of segments luteous, anus black: basal half of tegmina somewhat whitish with numerous, irregular fuscous spots; apical half fuscous with numerous whitish circular spots, varying very much in size and most of them ocellated: wings somewhat whitish, apex broadly fuscous: feet and rostrum black; clypeus luteous (*Westw.*). Body with cephalic process long $33\frac{1}{2}$; exp. teg. 76 millims.

Reported from Assam: the Indian Museum possesses specimens from Sikkim, Khasiya Hills, Sibságar, Shillong. In fresh specimens the whole of the tegmina and abdomen above and below is thickly covered with a white powdery substance: the abdomen, too, is of a rich red colour, which fades to fulvous, and the wings at the base are a light blue, which fades to grey. The Indian Museum possesses a remarkable local variety from Mussooree in which the entire cephalic process is dull red and the ground of the tegmina is much lighter.

8. *FULGORA PONDEROSA*, Stål.

Hotinus ponderosus, Stål, Ofvers. K. V.-A. Förh. xi, p. 244 (1854): Walker, Cat. Hom. B. M. Suppt. p. 315 (1858).

Fulgora ponderosa, Butler, P. Z. S. p. 98 (1874).

Cephalic process half the length of the body, cylindrical, black-piceous, ascending at the apex, which is testaceous: thorax and scutellum yellow-testaceous, the latter with four basal spots and two behind the middle, black: tegmina sordid white, sparingly covered with a white farinose substance; a median band spotted with white; and two spots at the anterior margin before the middle and one at the sutural margin, black; several fuscous spots on the disc and apex, which is spotted white: wings sordidly whitish subhyaline, weakly fuscous at the apex: abdomen yellow testaceous, segments margined testaceous: feet and rostrum black; posterior femora yellow-testaceous beyond the middle (*Stål*). Body long, 38: exp. teg. 88 millims.

Reported from India. There is little doubt that this is merely a variety of *F. clavata*, *Westw.*

Sec. 3. *Species with red and whitish wings.*

9. *FULGORA OCLATA*, Westwood.

Fulgora oculata, Westwood, Trans. Linn. Soc. xviii, p. 142, t. 12, f. 5 (1841); Butler, P. Z. S. p. 99 (1874).

Var. *a. Fulgora (Hotina) oculata*, Westwood, Cab. Or. Ent. p. 73, t. 36, f. 2 (1848).

Var. *b. Fulgora subocellata*, Guérin, Rev. Zool. p. 183, (1839); Delessert, Souv. Voy. Inde, p. 66, t. 16, f. 1 (1842); Butler, P. Z. S., p. 99, (1874).

Hotinus oculatus, Walker, Cat. Hom. B. M. ii, p. 267, (1851).

Hotinus subocellatus, Walker, l. c. p. 267, (1851); J. L. S. Zool. i, p. 84, (1856).

Cephalic process as long as the body, ascending, slender: pale greyish-fulvous, abdomen and wings clothed with a fine white powdery substance, mesothorax more fulvescent: tegmina greyish fulvous, pale, with about twenty-four ocellated spots, fulvous rings girdled whitish: wings white-farinose, palely virescent at the base with the anterior margin having a large roseate patch in the middle ending in a fuscous spot and another smaller towards the middle: feet palely greyish-luteous; four anterior tibiae and tarsi and the last tarsi, black (*Westw.*) Long with cephalic process 35; exp. teg. 63 millims.

Reported from India.

Var. *a.* Cephalic process as long as the body, ascending at the apex, brunneous; body greyish luteous, powdered with a white farinose substance: tegmina greyish fulvous, each with 24-30 fulvous ocellated spots, encircled with buff; wings clothed with a white powdery substance, the base pale green, middle of the costa marked with a large rosy patch and followed by a brown streak which is sometimes extended over the whole apex of the wing which is, in such case, marked with several paler spots; legs luteous, the four anterior tibiae and tarsi and the two hind tarsi, black (*Westw.*) Exp. teg. 65-87 millims.

Reported from Malabar, Penang.

Var. *b.* Cephalic process as long as the body, ascending at the apex, obscurely ferruginous above, green beneath: body and feet green, anterior and intermediate tibiae black; tegmina fulvescent green, subocellated yellow: wings white somewhat green at the base, clothed with a white powdery substance and spotted on the anterior margin with black and ferruginous (*Guérin*). Long, 48; exp. teg., 93 millims.

Reported from Nepál, Penang, Malacca. Guérin keeps this separate as he considers that *F. oculata*, West. is smaller, the spots on its tegmina are tawny, very restricted and surrounded by whitish on grey-tawny ground and its wings are also adorned with a great rosy patch, tipped with brown; characters wanting in his *F. subocellata*. Still comparing the wide differences in the extreme varieties of *F. clavata* this variety cannot at present receive specific rank.

Var. *c.* Spots on the tegmina confluent and of a rosy colour: the green at the base of the wings absent. Var. *verhuelli*.

This section includes also the following:—

F. sultana, Adams, P. Z. S. p. 83 (1847). Borneo.

F. gigantea, Butler, P. Z. S. p. 99 (1874). Borneo.

C. *Species with blue-green wings.*10. *FULGORA AMPLECTENS*, n. sp.

This species forms the connecting link between the preceding section and this; the coloration of the tegmina strongly resembles that of the *F. oculata* group and the coloration of the wings places it in this section. Cephalic process as long as the body, somewhat horizontal, gradually ascending somewhat towards the tip, subrotundate above and subequal in size throughout, black-brown throughout, above and beneath, except the tip which is reddish-testaceous and subpellucid, apical half below the tip irrorated with white dots: thorax deep brown, blacker on the disc: abdomen above and beneath, black; posterior margins of the dorsal segments narrowly fulvous: feet brown throughout: tegmina brown, veins fulvous, basal two-thirds finely covered with a white powdery substance above and bright fulvous beneath, this white powdery substance intensified across the base of the apical third so as to form a white band which bears a row of four fulvous spots, a small one and the largest towards the costal margin and two small ones towards the internal margin, four or five very faint similar fulvous spots and very numerous light brown spots are sprinkled over the basal two-thirds: wings blue, apex broadly and external margin less broadly, black, rayed black along the veins towards the base somewhat as in *F. pyrrhorhyncha*, Don., to which this species is very closely allied, differing chiefly in the coloration of the abdomen and the size, arrangement, and number of the spots on the tegmina. Body long to eyes, 24; cephalic process from eyes, 23; exp. teg. 93 millims.

The Indian Museum possesses a specimen from Perak.

11. *FULGORA PYRRORHYNCHA*, Donovan.

Fulgora pyrrorhynchus, Donovan, Ins. Ind. Hem. t. 7, f. 1 (1800): Règne Animal ed. Masson, t. 96, f. 2 (n. d.).

Hotinus pyrrorhynchus, Walker, List Hom. B. M. ii, p. 267 (1851); J. L. S. Zool. x, p. 96 (1867).

Fulgora pyrrorhina, Westwood, Trans. Linn. Soc. xviii, p. 139 (1841); in Donovan's Ins. Ind. (2nd ed.) p. 13 (1842).

Fulgora rajah, Guérin, Rev. Zool. p. 183 (1839).

Fulgora pyrrorhyncha, Butler, P. Z. S. p. 100 (1874).

Cephalic process large, of a dark purple, thickly sprinkled with a white powdery substance, ascending, tip scarlet and somewhat pellucid: tegmina brown, pale across the middle; wings black, green at the base (*Donovan*).

Cephalic process about 25 millims; long, purple, spotted white, ascending; apex incrassated, red; dorsum of abdomen greenish with three black spots on the anterior margin of each segment; lateral mar-

gins of thorax and basal margin of scutellum somewhat testaceous: tegmina brown, spotted pale glaucous, and with a paler band, basal half with eleven irregularly placed, round, yellow spots, a pale band with a transverse row of four round spots of a deeper colour approaching fuscous and slightly margined inwardly with yellow and the apical fourth has eight smaller round yellow spots. Guérin describes his *F. rajah* as having the cephalic process as long as the body, ascending, brunneous, apex somewhat dilated, red: body and feet brunneous; tegmina blackish fulvous, spotted with yellow, a broad pallid band at the apex: wings black, blue at the base. Long, 44 millims.

Reported from Nepál (*Don.*); Malacca (*Guér.*).

12. *FULGORA MACULATA*, Olivier.

Fulgora maculata, Olivier, Enc. Méth. vi, p. 568 (1791); Stoll, (*La Cigale verte porte-lanterne*) Cigales, p. 98, t. 26, f. 143 (1788); Burm. Handb. Ent. ii, (i) p. 169 (1835); Westwood, Trans. Linn. Soc. xviii, p. 140 (1841); Duncan's Nats. Lib. 1, p. 284, t. 23, f. 2 (1840); Butler, P. Z. S. p. 100 (1874).

Flata maculata, Germar, Thon's Archiv. ii, fasc. 2, p. 46 (1830).

Hotinus maculatus, Walker, Cat. Hom. B. M. ii, p. 266 (1851).

Cephalic process almost as long as the body, ascending, recurved; head black; eyes and antennæ grey; thorax brown, shaded with black: abdomen light brown, banded with black, same above and beneath; tegmina above black with interrupted bands or continuous rows of glaucous spots, apical portion irrorated yellowish-green: wings with the basal portion towards the anterior margin and a patch near the anal margin, greenish-blue ending in fine rays, apical portions black: feet deep brown, posterior pair spinose. Body long to the eyes, 21: cephalic process from the eyes 19; exp. teg. 71 millims.

The Indian Museum possesses a specimen from Ceylon.

13. *FULGORA FULVIROSTRIS*, Walker.

Hotinus fulvirostris, Walker, List Hom. B. M. Suppt. p. 41 (1858).

Butler (P. Z. S. p. 100, 1874) unites this species with *F. maculata*, Olivier, as a variety, but it is as much entitled to specific rank as *brevirostris*, *viridirostris*, and *spinolæ*, which are similar varieties of *F. candelaria*, Linn. It clearly differs from *F. maculata* in having the cephalic process subpellucid, sordid fulvous-testaceous or tawny instead of opaque deep green; the markings on the tegmina follow the arrangement of the markings on the tegmina in *F. maculata*, but are sordid whitish instead of bluish-white, and the wings are sordid greenish-white rayed with black-fuscous nearly up to the base, the apex being broadly and the external margin less broadly black.

Black : head tawny, cephalic process abruptly curved and ascending, a little shorter than the body, blackish on each side, at the base : pronotum with some dingy whitish or testaceous marks on each side : mesonotum more or less testaceous or whitish on the disc ; hind border and abdomen whitish or testaceous, the latter with some irregular and incomplete blackish bands : tegmina with about 20 whitish or straw-coloured spots and dots, some of them connected, forming four very irregular bands : wings white or dingy whitish towards the base (*Walker*). Body long, 27 ; cephalic process from the eyes, 20 ; exp. teg. 59 millims.

Reported from Ceylon : the Indian Museum possesses two specimens from Ceylon. It is possible that we should place this and the two next as varieties of *F. maculata*.

14. *FULGORA DELESSERTII*, Guérin.

Fulgora delessertii, Guérin, Rev. Zool. p. 183 (1839) ; Delessert, Souv. Voy. Inde, pt. ii, p. 66, t. 16, f. 2 (1843) ; Butler, P. Z. S. p. 100 (1874).

Hotinus delessertii, Walker, Cat. Hom. B. M. ii, p. 266 (1851).

Cephalic process half the length of the body, ascending, green : prothorax ferruginous : tegmina greenish black, spotted with yellow : wings cærulean, black at the apex (*Guérin*). Long 34 ; exp. teg. 75 millims.

Reported from the Nilgiris, Malabar.

This species is near to *F. maculata*, Olivier, but differs from it in the coloration of the spots on the tegmina. It differs from *F. candelaria*, Linn. "par les deux facettes latérales de la face frontale qui ont à leur extrémité une carène longitudinale allant du sommet des faces latérales au sommet de la tête." The cephalic process is short and compressed.

15. *FULGORA ANDAMANENSIS*, Distant.

Fulgora andamanensis, Distant, Trans. Ent. Soc. p. 152, t. 5, f. 7, 7 a (1880).

Cephalic process long, slender, ascending, as long as the body ; beneath greenish luteous with the apex black, above black, apical two-thirds irrorated with small white spots and a luteous streak on each side within the eyes, which are also luteous ; thorax above black, with dull luteous markings ; abdomen above pale greenish-luteous, beneath black ; coxæ, trochanters, and femora fuscous, the last darkest, tibiæ and tarsi, black. Tegmina black, with the veins pale green and a number of brown spots encircled with pale greenish, arranged thus :—a transverse row of four near the base, the upper three fused together ; two irregular transverse rows on the disc, a little nearer together than from the basal row, followed by a straighter transverse row of three smaller ones ; remaining apical portion occupied by about twelve spots of which the largest are two fused together on the costa and one with a very small

brown centre about the apex of the inner margin: extreme apical spots very small and somewhat indistinct. Wings blue with the apex broadly, and outer margin somewhat narrowly, black. The veins on the blue portion of the wings are green, with the exception of two which are narrowly black at the base (*Distant*.) Long, cephalic process 20; body 20; exp. teg. 68 millims.

Reported from the Andaman Islands.

Allied to *F. delessertii*, Guérin, and *F. maculata*, Olivier. It somewhat resembles the former in the pattern of the tegmina, but differs in the length of the cephalic process, which in *F. delessertii* is but about half the length of the body. In length and structure of the cephalic process, it is more closely allied to *F. maculata*; the cephalic process, however, is longer than in that species, being about equal to the length of the body; and, besides the different pattern of the tegmina, the wings are much more narrowly black along the posterior margin. The Indian Museum possesses a specimen from the Nicobar islands which appears to differ from the type figured by Distant in the cephalic process being longer, more distinctly ascending and recurved, and in the absence of white spots on the upper two-thirds. The markings on the tegmina are the same and do not differ more than individuals of allied species differ from each other. The wings are marked much as in *F. delessertii* Guérin, the outer margin is more broadly suffused with blackish than in the type and the blackish extends further towards the base in rays.

16. FULGORA CURTIPRORA, Butler.

Fulgora curtiprora, Butler, A. M. N. H. (4 ser.) xiv, p. 131, (1874).

Closely allied to *F. gemmata*, West., but with the cephalic process one-third shorter and the colouring different: tegmina with the corium bright green speckled with black, area beyond black; the veins green, becoming ochraceous near the apex; entire surface covered with small orange spots: wings shining black, varied with pale transparent green as in *F. gemmata*: cephalic process, head, and thorax testaceous, thorax spotted with black; abdomen black, segments edged with green above, with ochreous below; legs and anus red (*Butler*). Body long with cephalic process, 23; cephalic process, long $8\frac{1}{2}$; exp. teg. 50 millims.

Reported from Sikkim.

17. FULGORA GUTTULATA, Westwood.

Fulgora (Pyrops) guttulata, Westwood, A. M. N. H. ix, p. 119 (1842).

Fulgora (Hotina) guttulata, Westwood, Cab. Or. Ent. p. 8, t. 3, f. 3 (1848).

Pyrops guttulata, Walker, List Hom. B. M. ii, p. 269 (1851).

Fulgora guttulata, Butler, P. Z. S., p. 101 (1874).

Cephalic process about half as long as the thorax, its apex slightly bent upwards and acute; head and thorax above of a fulvous clay-colour dotted with black: segments of the abdomen brown at the base: tegmina pale fulvous clay-coloured, gradually assuming a redder tinge beyond the middle with a great number of small pale buff dots edged with a black ring, the wings very pale yellowish, with a few black dots and a broad dark brown margin (*Westw.*) Body long with cephalic process, 25; exp. teg. 50 millims.

Reported from N. India.

The rostrum is very long and slender and extends to the end of the body, separated from the genæ by a transverse raised line, between which and the eyes is a black dot. The four anterior legs have a black ring at the base of the tibiæ, the apex of which and the tarsi are also black, the underside of the body and the hind legs are entirely fulvous with two small black spots at the base of the coxæ and two long black spots at the sides of the penultimate abdominal segment.

18. *FULGORA GEMMATA*, Westwood.

Fulgora (Hotina) gemmata, Westwood, Cab. Or Ent. p. 7, t. 3, f. 2 (1848).

Hotinus gemmatus, Walker, Cat. Hom. B. M. ii, p. 267 (1851).

Fulgora gemmata, Butler, P. Z. S. p. 101 (1874).

Head and thorax fulvous with black markings; abdomen above black with posterior margins of the segments narrowly green; tegmina green at the base which gradually changes into a dark brownish crimson; they are entirely covered with minute black dots, each tegmen being ornamented with about 30 bright orange spots; the wings are green, with a broad black border, which extends into the disc of the wing, forming several large, black blotches; legs, dark red (*Westw.*) Body long exclusive of cephalic process, 19; exp. teg. 28 millims.

Reported from Himálaya, N. India, Darjiling: the Indian Museum possesses specimens from Sikkim, Khasiya Hills, Assam. There is also a specimen in which the orange spots on the tegmina are obsolete and are replaced by roundish black rings with the centre of the ground colour of the tegmina; the wings are precisely the same.

To this section also belong the following species:—

F. ducalis, Stål, Trans. Ent. Soc. (3 ser.) i. p. 576 (1863). Cambodia.

F. caelestina, Stål, l. c. p. 576 (1863). Cambodia.

F. intricata, Walker, J. L. S. Zool. i, p. 132 (1857). Borneo.

F. stellata, Butler, P. Z. S. p. 100 (1874). Borneo.

Sec. D. *Species with scarlet wings.*19. *FULGORA CARDINALIS*, Butler.

Fulgora cardinalis, Butler, A. M. N. H. (4 ser.) xiv, p. 131 (1874).

Tegmina yellowish-olivaceous, veins and costal area bright green; entire surface covered with black-edged orange spots, arranged as in *F. virescens*, West., but larger and better defined; outer margin brown: wings carmine; outer margin brown, broadest at the apex: cephalic process, head and prothorax above, and the entire pectus green, spotted with black; meso- and meta-thorax testaceous, black-spotted; abdomen above reddish, below testaceous, varied with emerald-green: legs emerald-green (*Butler*). Body including cephalic process, 25; cephalic process $8\frac{1}{2}$: exp. teg. 53 millims.

Reported from Nepál, Sikkim. Allied to *F. pyrrhochlora*, Walker, and *F. virescens*, Westw., but differing structurally from both in its short abruptly compressed cephalic process. The Indian Museum possesses specimens from Sikkim.

To this section also belong the following species:—

F. coccinea, Walker, List Hom. B. M. Suppt. p. 42 (1858). Ceylon.

F. decorata, Westwood, Trans. Linn. Soc. xviii, p. 141, t. 12, f. 4, (1841). Java.

F. guttifera, Stål, Ofvers. K. V.-A., Förh. p. 448 (1859). Ceylon, Shanghai?

F. pyrrhochlora, Walker, Butler, P. Z. S. p. 101 (1874). Borneo.

Sec. E. *Species with pale greenish wings (subhyaline).*20. *FULGORA VIRESCENS*, Westwood.

Fulgora (Pyrops) virescens, Westwood, A. M. N. H. ix, p. 119 (1842).

Fulgora (Hotina) virescens, Westwood, Cab. Or. Ent. p. 8, t. 3, f. 5 (1848).

Pyrops virescens, Walker, Cat. Hom. B. M. ii, p. 209 (1851).

Hotinus semiannulus, Walker, l. c. Suppt. p. 42 (1858).

Fulgora virescens, Butler, P. Z. S. p. 102 (1874).

Cephalic process short, conical, scarcely bent upwards: entirely pale green with a minute black spot on each side of the prothorax and scutellum; the tegmina broad with the anterior margin much arched, green with numerous small rounded orange-coloured spots, outwardly edged with black; wings very pale green and semitransparent (*Westw.*). Body long with the cephalic process 19—20: exp. teg. 56—58 millims.

Reported from India, Silhat: the Indian Museum possesses a specimen from Silhat.

To this section also belongs the following species:—

F. cultellata, Walker, J. L. S. Zool. i, p. 143 (1857). Borneo.

Genus *ALCATHOUS*, Stål.

Trans. Ent. Soc. (3 Ser.) i, p. 577 (1863).

Head much narrower than the thorax, protuberant, frons somewhat roundly-amplified near the apex, thence distinctly narrowed upwards, tricarinate; clypeus carinate in the middle: rostrum almost reaching the apex of the abdomen: antennæ short, second joint very briefly sub-cylindrical, obliquely truncated at the apex. Thorax unicarinate in the middle, somewhat produced anteriorly in the middle, produced part truncated, posterior margin, straight: scutellum tricarinate, twice as long as the thorax. Tegmina somewhat amplified towards the apex which is obtusely obliquely rounded, longitudinal veins rarely furcate, interior simple, only third apical part furnished with remote, transverse, small veins, irregularly anastomosed: wings with more than the basal half without transverse veinlets. Feet moderate, anterior femora beneath slightly dilated, posterior tibiæ, 5—6 spinose (*Stål*). Allied to *Fulgora*.

21. *ALCATHOUS FECIALIS*, Stål.

Alcathous fecialis, Stål, Trans. Ent. Soc. (3 ser.) i, p. 577 (1863).

Livid, dorsum of abdomen and coccineous wings excepted, minutely sprinkled fuscous, here and there infuscate: tegmina clouded fuscous with small costal spots, apex of wings, broad posterior limbus and some spots near the anal area, two rows of spots on the dorsum of the abdomen and rings on the tibiæ blackish; femora fuscous, obscurely irrorated, banded palely. ♀, long, 15; exp. teg. 32 millims.

Head a little shorter than the thorax and scutellum together, produced part somewhat subabruptly narrowed and compressed before the eyes, before the middle transversely impressed and somewhat reflexed; vertex at the base more than twice as broad as the transverse eye, basal half triangular, apical part very narrow; frons flat beneath the middle, furnished with three parallel ridges, the median ridge interrupted in the middle; transverse veinlets on the tegmina are subrufescent (*Stål*).

Reported from N. India.

Genus *PYROPS*, Spinola.

A. S. E. F. viii, p. 231 (1839); Am. & Serv., Hist. Nat. Ins. Hém. p. 491 (1843); Stål, Hem. Afric. iv, p. 133, 139 (1866).

Head produced forwards, in a long process, somewhat rounded, gradually very slightly somewhat slender, straight, obliquely truncated at the apex; the lateral part behind the eyes furnished with a subconical or triangular callus or knob; vertex transversely convex, continued up to the apex of the process; genæ rounded anteriorly: eyes small;

second joint of antennæ short, thick. Pronotum and scutellum fairly convex transversely, without ridges, the former gradually narrowed forwards, barely or very slightly sinuated at the base. Entire tegmina or the largest portion reticulated, valvate behind the clavus. Feet somewhat thick and short; first tibiæ, femora, and trochanters together equal in length, last armed with 5—7 spines (*Stål*).

22. PYROPS PUNCTATA, Olivier.

Fulgora punctata, Olivier, Enc. Méth. vi, p. 569 (1791); Stoll, Cigales, p. 34, t. 6, f. 28 (1788); Gray, Griffith's An. King, t 138, f. 2 a-c (1832).

Flata punctata, Germar, Thon's Archiv. ii (2), p. 47 (1830).

Fulgora affinis, Westwood, Trans. Linn. Soc. xviii, p. 144, t. 12, f. 6 (1841).

Pyrops punctata, Spinola, A. S. E. F. viii, p. 237 (1839); Walker List Hom. B. M. ii, p. 268 (1851).

Cephalic process almost as long as the body, truncated at the apex; luteous-greyish; thorax, feet, and tegmina sprinkled with black dots: abdomen above black: wings white, veins pallid. Head, cephalic process, pro- and meso-notum and tegmina pale luteous, sprinkled with black dots, varying in size: cephalic process almost as long as the body, almost straight, subcylindrical, obliquely truncated at the apex, fuscous-luteous, rough with dots, paler at the apex: the black dots on the tegmina disposed longitudinally on the veins: wings white, subopaque, a little infusate towards the apex, veins paler, except at the base: abdomen black, with the narrow margin of the segments, luteous; feet short, luteous; femora with a subapical ring; tibiæ with three black rings (*F. affinis*, Westw.). Body long with cephalic process, $33\frac{1}{2}$; exp. teg. 55 millims.

Reported from China, Nepál, Silhat, Ceylon, Java, Guinea (?): the Indian Museum possesses specimens from Sikkim.

23. PYROPS PERPUSILLA, Walker.

Pyrops perpusilla, Walker, List Hom. B. M. ii, p. 269 (1851).

Body stramineous; head with its process as long as the rest of the body; abdomen luteous above: legs yellow; tegmina very pale stramineous; a few brown dots on the veins near the tip and along the hind border which is somewhat darker than the rest of the wing; a rather large dot in the disc on the fork of one of the longitudinal veins: wings colourless, veins pale yellow (*Walker*.) Body long $8\frac{1}{2}$; wings, long 9 millims.

Reported from N. Bengal.

Genus HOMALOCEPHALA, Amyot & Seville.

Omalcephala, Spinola, A. S. E. F. viii, p. 261 (1839) : *Homalocephala*, Am. & Serv., Hist. Nat. Ins. Hém. p. 492 (1843) ; Stål, Hem. Afric. iv, pp. 133, 145 (1866).

Head broad, somewhat narrower than the thorax, produced before the eyes, round or triangular ; behind the eyes prominulous backwards in a short, thick spine : vertex at least four times broader than the eyes, flat or somewhat so : frons flat somewhat broader than the clypeus, sides parallel, very slightly amplified towards the apex ; clypeus without a median ridge : rostrum reaching the last coxæ. Thorax broadly rounded anteriorly, furnished with a fine longitudinal ridge : scutellum more than twice as long as the thorax. Tegmina with the sides parallel, obliquely obtusely rounded at the apex, very densely reticulated, reticulation in the costal area obsolete, claval vein united with the commissure at the apex of the clavus : wings entire. Feet somewhat short, simple ; first tibiæ as long as the femora, last armed with 3—4 spines (*Stål*).

24. HOMALOCEPHALA FESTIVA, Fabricius.

Fulgora festiva, Fabricius, Spec. Ins. ii, p. 315 (1781) ; Mant. Ins. ii, p. 261 (1787) ; Olivier, Enc. Méth. vi, p. 572 (1791) ; Fabr., Ent. Syst. iv. p. 5 (1794) ; Syst. Rhyng. p. 4 (1803) ; Donovan, Ins. India, Hem. t. 7, f. 2 (1800).

Omalcephala festiva, Spinola, A. S. E. F. viii, p. 261 (1839) ; Walker, List Hom. B. M. ii, p. 283 (1851).

Homalocephala festiva, Am. & Serv., Hist. Nat. Ins. Hém. p. 493 (1843).

Head above flat, fuscous ; beneath flavescent, with a black margin : thorax fuscous, immaculate : tegmina fuscous, exterior margin virescent, which colour, however, does not reach the apex of the wing : there are five black dots along this margin of which the four posterior end inwards in a fulvous dot : wings sanguineous, fuscous at the apex (*Fabricius*).

Head above flat, obscure ; beneath, yellowish, border black : thorax obscure immaculate : tegmina obscure with the costal margin greenish which does not extend to the apex, on this part are five black spots of which the four posterior are bounded internally by a tawny spot : wings sanguineous with the apex obscure (*Olivier*). Donovan states that the tegmina have a green margin on which there are a few black spots semicircled with orange. Long, 17 millims.

The Indian Museum possesses a very mutilated specimen.

Genus LIMOIS, Stål.

Stettin Ent. Zeit. xxiv, p. 230 (1863) : Hem. Afric. iv, p. 134 (1866).

Head narrower than the thorax, slightly protuberant upwards ; frons longitudinally convex, abruptly dilated on both sides at the apex,

much narrowed upwards, bicarinate lengthways, lateral margins reflexed beneath the middle; vertex transverse; clypeus carinate in the middle, lateral margins obtuse, obtusely carinate; thorax twice as broad as the head, somewhat sloped forwards, broadly truncate posteriorly, obsoletely carinate in the middle: tegmina somewhat amplified towards the apex, which is obliquely obtusely rounded, furnished behind the middle with remote small transverse veins: wings sinuate in the middle, posteriorly, much shorter than the tegmina: feet moderate, simple; posterior tibiæ 5-spinose (*Stål*). Differs from *Aphana* in the structure of the head and the short wings.

25. LIMOIS WESTWOODII, Hope.

Lystra westwoodii, Parry, Hope, Trans. Linn. Soc. xix, p. 133, t. 12, f. 3 (1845); Walker, List Hom. B. M. ii, p. 286 (1851).

Limois westwoodii, Stål, Stettin Ent. Zeit. xxiv, p. 231 (1863).

Fuscous yellow, cephalic process concolorous, recurved between the eyes; frons almost triangular, elongate: basal half of tegmina fuscous yellow, sprinkled with fuscous spots, varying in size: wings at the base sanguineous and margined by a narrow black line and with three black spots, remainder immaculate, hyaline: body beneath black. (*Hope*.) Body long, $12\frac{1}{2}$; exp. teg. 48 millims.

Reported from Silhat: the Indian museum possesses a specimen from Calcutta, expanse of tegmina under 40 millims.

Genus APHANA, Guérin, Stål.

Aphæna, Guérin, Voy. Bélanger, Ind. Orien. p. 451 (1834); Spin., A. S. E. F. viii, p. 240 (1839): *Aphana*, Burm., Handb. Ent. ii (i) p. 166 (1835); Amyot & Serville, Hist. Nat. Ins. Hém. p. 496 (1843); Stål, Stettin, Ent. Zeit. xxiv, p. 231 (1863); Hem. Afric. iv, p. 134 (1866).

Head not protuberant; frons slightly narrowed upwards or with the sides parallel, lateral margins more or less distinctly broadly bisinuate with two ridges running through them, diverging upwards from the apex, terminating on both sides the median area: thorax with a ridge very often much elevated: first femora not amplified above at the apex; last tibiæ usually 5-spinose, unarmed above at the base (*Stål*).

26. APHANA FARINOSA, Fabricius.

Lystra farinosa, Fabricius, Syst. Rhyng. p. 57 (1803): Germar, Thon's Archiv, ii (fasc. 2) p. 52 (1830).

Aphana farinosa, Spinola, A. S. E. F. viii, p. 244 (1839); Walker, List Hom. B. M. ii, p. 274 (1851).

Aphana scutellaris, White, A. M. N. H. xvii, p. 330 (1846).

Aphæna scutellaris, Westwood, Cab. Or. Ent., p. 73, t. 36, f. 3 (1848); Walker, List Hom. B. M. ii, p. 277 (1851); J. L. S. Zool. i, p. 143 (1857); var. l. c. x, p. 96 (1867).

Aphæna saundersii, Walker, List Hom. B. M. ii p. 277 (1851); J. L. S. Zool. i. p. 84 (1856); l. c. p. 143 (1857).

Aphana farinosa, Burm., Handb. Ent. ii (2), p. 166 (1835); Stål, Ofvers. K. V.-A. Förh., p. 485 (1862); Stettin Ent. Zeit., xxiv, p. 232 (1863).

Fuscous; tegmina yellow at the apex; base of the wings and the abdomen, red, the former spotted hyaline (*Fabr.*). Head, pronotum, and border of the tegmina, reddish-brown, the under half of the same black, apex golden yellow, powdered white: wings with a red ground with small white spots; tip brown: feet, black (*Burm.*). Larger than *A. atomaria*, Fabr. greenish-brown; occiput excavated and marked with two whitish powdery spots between the eyes; the pronotum with an elevated ridge down the middle, the scutellum powdered with white, the metathorax blackish; the margins of the abdominal segments luteous-green, the base powdered with white; the basal half of the tegmina ferruginous, the disc powdered with white, and with an irregular black fascia in the middle and some blackish spots near the hind margin, the apical portion horn-coloured, varied with buff, hind-wings orange red, spotted with white, the base black, the apical portion horn-coloured, and the anal angle buff; body beneath, and legs, pitchy (*Westwood*). Body long, 22; exp. teg. $52\frac{1}{2}$ —66 millims.

Reported from Borneo, Java, Sumatra, India (*Spin.*): the Indian Museum has a much abraded specimen from Sinkip Island. The type described by White was from Borneo and varies in the green colour of the basal portion of the costa and the base of the tegmina. Westwood's specimen was from Java and the Indian specimen agrees best with his description.

27. APHANA ATOMARIA, Weber.

Cicada atomaria, Weber, Obs. Ent. p. 113 (1801).

Lystra atomaria, Fabricius, Syst. Rhyng., p. 57 (1803); Germar in Thon's Archiv. ii (fasc. 2), p. 52 (1830).

Aphæna nigro-punctata, Guérin, Voy. la Coquille, Zool. ii, (2), p. 185 (1830); Spin., A. S. E. F. (1 sér.) viii, p. 248 (1839); Am. & Serv., Hist. Nat. Ins. Hém. p. 497, (1843); Walker, List. Hom. B. M. ii, p. 274 (1851).

Aphæna atomaria, Spin., l. c. p. 248 (1839); Walker, l. c. p. 277 (1851); J. L. S. Zool. x, p. 96 (1867).

Aphana atomaria, Burm., Handb. Ent. ii (i) p. 167 (1835); Stål, Stettin Ent. Zeit. xxiv, p. 232 (1863); Hem. Fabr. ii, p. 87 (1869).

Fuscous, vertex and pronotum brick-colour: tegmina ferruginous, spotted black, abdomen above and wings sanguineous, the latter black at the apex and spotted black-hyaline (*Fabr.*). Head and pronotum

ochreous; mesonotum reddish-brown: tegmina of a red brown in the basal two-thirds with two large black spots on the external margin, another towards the end of the second third, in the middle; two other smaller black dots, one at the base and the other towards the end of the first third near the internal margin, and other smaller black dots sprinkled here and there: the apical third of the tegmina sordid yellowish or dull brown: wings bright red with the apex black, sprinkled with bluish spots or patches, the red disc also has four white patches, of which one is very small, with some dozen round black dots strewn about behind them: abdomen red above: body and feet, beneath, reddish-brown (*Am. & Serv.*) Long, 17; exp. teg. 46 millims.

Reported from Sumatra, Java, N. India: the Indian Museum possesses one abraded specimen exactly agreeing with the above description, locality unknown, and another from Marri (Panjab). There is a series from Sikkim agreeing in most respects except that the base of the wings is ochreous not sanguineous.

28. APHANA PULCHELLA, Guérin.

Aphana pulchella, Guérin, Voy. la Coquille, Zool. ii (2), p. 189 (1830); Spinola, A. S. E. F. viii, p. 294 (1835); Walker, List Hom. B. M., ii, p. 274 (1851); Stål, Ofvers. K. V.-A., Förh. p. 485 (1862); Java.

Aphana confucius, White, A. M. N. H. xviii, p. 24 (1846): China.

Aphana confucius, Walker, l. c. p. 280 (1851): China.

Aphana io, Walker, List Hom. B. M. ii, p. 279 (1851): N. India.

Aphana nigro-irrorata, Stål, Ofvers. K. V.-A. Förh. p. 244 (1854): China.

Aphana nigro-irrorata, Stål, Freg. Eug. Resa, Ins., p. 270 (1859): Hong-Kong.

Aphana pulchella, Stål, Stettin Ent. Zeit., xxiv, p. 232 (1863).

Smaller than *A. atomaria*, Fabr., from which it differs in not having the head and thorax yellow, by the tegmina spotted with irregular black dots and the feet yellowish, annulated blackish. Head pro- and meso-notum yellowish punctured grey; metanotum and abdomen vermillion, two small black spots on the former and weak black bands on the three first segments of the abdomen, which also show traces of being covered with a white cottony substance: head and thorax beneath of a fairly deep yellowish-brown with a white patch between the intermediate and posterior coxæ: abdomen beneath ochreous yellow, punctured black, the lateral margin of each segment with a black excavation, filled with a white powdery substance; feet brown, annulated yellow. Tegmina of a somewhat faded saffron-yellow, semitransparent, more yellow towards the apex, covered with numerous small black dots, a few larger; towards the tip and the interior margin a whitish quadrate spot, followed at the posterior and external angle by a brown patch confluent with the small black dots of the apex: wings vermillion, carmine

towards the base and a little orange in the middle and on the side of the anterior border: tip with a large black patch, adorned with small blue spots; posterior margin slightly infusate and disc with 16—17 small, nearly equal, black spots and four small white spots placed in the orange portion (*Guérin*). Long, 15: exp. teg. 37 millims.

The Indian form (*A. io*, Walker) is thus described:—

Body yellowish-brown; head and mesonotum punctured black, carinate; rostrum brown, as long as the body; metanotum, red; abdomen bright red; beneath, spotted black with a black stripe along each side and a brown posterior margin on each segment: legs black, femora and tibiæ flavo-annulate, posterior tibiæ spinose: tegmina yellowish-brown with numerous black marks which are confluent and form a black spot at the tip of the hind border; this spot has a yellowish-white spot adjoining; wings luteous, red at the base and along the inner border, with about 12 black and 4 white spots, brown along the hind border, terminating in a very large black spot which has a blue disc (*Walker*). Body long, $16\frac{1}{2}$; exp. teg. 46 millims.

Reported from China, Java, India: the Indian Museum possesses specimens from Sikkim and the Andamans.

29. APHANA VARIEGATA, Guérin.

Aphæna variegata, Guérin, Voy. Bélanger Ind. Orien. Zool. p. 455 (1834); Icon. Règne Anim., t. 58, f. 3 (1830-34); Spin., A. S. E. F. viii, p. 247 (1839); Walker, List Hom. B. M. ii, p. 278 (1851).

Penthicus variegatus, Blanchard, Hist. Nat. Ins. iii, p. 171, Hém. t. 12, f. 4 (1840-41).

Aphæna basirufa, Walker, List Hom. B. M. ii, p. 278 (1851); J. L. S. Zool. i, p. 143 (1857).

Aphana variegata, Am. & Serv., Hist. Nat. Ins. Hém. p. 497, t. 9, f. 1 (1843); Stål, Stettin Ent. Zeit, xxiv, p. 232 (1863).

Head flat in front, with two slightly elevated ridges: pronotum transverse, anterior border lobed and a little advanced, carinate in the middle, with a hollow on each side behind the median lobe, and a little emarginate posteriorly: mesonotum triangular, sides almost equal, pointed behind, tricarinate in the middle, one ridge longitudinal, and two lateral, curved: metanotum and abdomen bright red, separated by a white, farinose, transverse band; the head, pro-, and meso-notum brown, touching on deep olive-green. Tegmina brunneous, a little reddish at the base, more greenish at the tip with black patches and round black dots which increase in size towards the apex; two square yellowish patches at the middle third, one on the anterior, the other on the interior margin: wings much broader, a little sinuated on the posterior margin; the base up to one-third of their length bright red with three

black spots and an obscure patch ; middle third orange yellow ground with red, above 2-3 small white dots and below a small black spot : the apex is black with more or less numerous or confluent small blue dots ; posterior margin from this black portion to the internal angle is broadly bordered brown. Body beneath concolorous with the thorax, feet more blackish (*Guérin*). Long, 20 ; exp. teg. 55 millims.

Reported from Cochín-China, Philippines, Silhat : the Indian Museum possesses specimens from Sikkim.

30. *APHANA CAJA*, Walker.

Aphæna caja, Walker, List Hom. B. M. ii, p. 278 (1851).

Aphana caja, Stål, Stettin Ent. Zeit. xxiv, p. 235 (1863).

Fuscous-ochraceous ; thorax palely granulate towards the sides ; tegmina fawn-colour or palely olivaceous, clouded with black-fuscous and sprinkled with minute black-fuscous spots, further, behind the middle, adorned with a pallid subquadrate spot at the costal and commissural margins : wings croceous, sanguineous at the base, a small oblique, basal streak and 5-7 spots in anal half, black-fuscous ; 3-4 small white discoidal spots in the anterior area ; posterior limbus narrowly fuscous ; apical part black-fuscous, sprinkled with glaucous-mouldy spots ; abdomen sanguineous, dorsum with a double row of black spots, beneath fuscous-sanguineous : feet spotted olivaceous. ♀, long 21 ; exp. teg. 62 millims.

Nearly allied to *A. variegata*, *Guérin*, but larger, spots on the tegmina larger, wings sanguineous only at the base, posterior fuscous limbus narrower and especially with the vertex shorter, nearly thrice broader than long, more obtusely rounded, transverse basal keel straight, anterior margin less deeply sinuate in the middle : frons subequal at the base and the apex, not distinctly narrower at the base, anterior produced part of thorax more obtusely rounded. Frons somewhat longer than broad, lateral margins slightly broadly bisinuate, with two obtuse ridges diverging upwards and with an obsolete longitudinal ridge towards the base, the median area at the base very broadly rounded : thorax marked before the middle with two obsolete pallid spots (*Stål*).

Reported from Silhat.

31. *APHANA DIMIDIATA*, Hope.

Lystra dimidiata, Hope, Trans. Linn. Soc. xix, p. 133, t. 12, f. 4 (1845) ; Walker, List Hom. B. M. ii, p. 286 (1851).

Aphana dimidiata, Stål, Stettin Ent. Zeit. xxiv, p. 232 (1863).

Fuscous ; head, thorax, and feet concolorous : basal half of tegmina virescent, sprinkled with numerous minute dull black spots, apices sub-orange-hyaline marked with cretaceous spots : basal half of wings greenish with the posterior part whitish, spotted black, apices fuscous, irrorated with virescent spots (*Hope*). Long $14\frac{1}{2}$: exp. teg. 46 millims.

Reported from Silhat.

32. *APHANA NICOBARICA*, Stål.

Aphana nicobarica, Stål, Berlin Ent. Zeitschr. xiii, p. 241 (1869).

Sordid olivaceous-green : scutellum, pectus, abdomen, and feet black-fuscous : tegmina before the middle æruginous, sprinkled with black ; behind the middle, ochraceous, marked with a band and mouldy spots ; apical limbus, black ; wings, black, a very large basal spot cærulean-virescent. Long 19 ; exp. teg. 55 millims, ♀.

Size of *A. farinosa*, Burm., from which it differs in the head produced anteriorly, seen from above equal in length and breadth between the eyes, roundly-angulated ; frons longer, furnished with a recurved process. Frons rugulose, tumescent at the base and with a median process short, compressed, recurved, obsoletely tricarinate, the ridges diverging upwards, the median ridge disappearing below the middle : vertex narrowed forwards, obsoletely carinate in the middle ; lateral margins dilated, elevated : thorax furnished with a raised, acute ridge, running through it, strongly bi-impressed on the disc, scutellum tricarinate. The æruginous half of the tegmina covered with minute and often confluent black dots, closer at the apex ; apical half ochraceous with the apical limbus black ; the spots and an anterior band clothed with a white powdery substance : wings black with a large basal patch extended a little beyond the middle, cærulean-virescent. Apical margins of the dorsal segments of the abdomen, green (*Stål*).

Reported from the Nicobars.

33. *APHANA* (?) *DIVES*, Walker.

Aphæna dives, Walker, List Hom. B. M. ii, p. 280 (1851).

Body dark ferruginous ; disc of the vertex rather concave, borders slightly ridged, fore margin slightly inclined upwards : rostrum extending far beyond the posterior coxæ, dark brown : mesonotum with a slight longitudinal furrow, fore-border very undulating ; a black band along the fore-border of the scutellum ; metanotum black : abdomen obconical, larger than the thorax, black above, thickly covered with white down, red beneath : legs black, sulcated, femora brown, posterior tibiæ spinose : tegmina green, adorned between the veins with orange streaks which are interrupted by very numerous brown dots, the latter are

sometimes confluent; a tawny slightly curved band separates this part from the reticulated tips which are brown with tawny veins: wings green, with numerous brown spots, gray mingled with white towards the tips, white along the inner border (*Walker*). Long, $14\frac{1}{2}$: exp. teg. 42 millims.

Reported from Malabar.

34. *APHANA* (?) *ALBIFLOS*, Walker.

Aphæna albiflos, Walker, List Hom. B. M. ii, p. 280 (1851).

Body above, green; beneath, bright-red; vertex tawny, indistinctly carinate along the border; face slightly carinate; rostrum nearly as long as the body, tip black; a concavity corresponding to the eye on each side of the fore-border of the pronotum of which the anterior portion of the lateral margins is black, posterior margin, tawny; longitudinal ridge almost obsolete: abdomen obconical, much longer than the thorax, thickly covered with white down: legs ferruginous, sulcated; femora, red; posterior tibiæ slightly spinose: tegmina black, adorned with numerous little green marks; reticulated part, ferruginous; wings brown, adorned with bluish-green spots, white at the tips and along the posterior margin (*Walker*). Body long, $16\frac{1}{2}$; exp. teg. 55 millims.

Reported from Malabar.

Genus *LYCORMA*, Stål.

Stettin, Ent. Zeit. xxiv, p. 232 (1863): part *Aphæna*, Guérin.

Head somewhat protuberant, protuberance very short, reflexed: frons, distinctly upwards and at the base more narrowly, furnished with two parallel obtuse ridges, sometimes obliterated beneath the middle; vertex truncated at the base, last angles not produced: thorax finely carinate in the middle: first femora not amplified at the apex above: last tibiæ armed with 4-5 spines; unarmed at the base, above (*Stål*).

35. *LYCORMA IMPERIALIS*, White.

Aphana imperialis, White, A. M. N. H. xvii, p. 330 (1846).

Aphæna imperialis, Westwood, Cab. Or. Ent. p. 74, t. 36, f. 4 (1848); Walker, List Hom. B. M. ii, p. 282 (1851).

Aphæna placabilis, Walker, l. c. Suppt. p. 46 (1858).

Lycorma imperialis, Stål, Ofvers. K. V.-A. Förh. p. 485 (1862); Stettin Ent. Zeit. xxiv, p. 232 (1863).

Tegmina olive-green, the basal portion with numerous black spots, most of which are traversed by green veins; the tip black, beautifully reticulated with olive-green: wings, at the base, purplish madder with

11—12 large black spots, the purplish part reticulated with whitish ; the end brownish-black ; a bluish-green band-like mark across the middle of the wing, not nearly reaching the hind margin, the three nerves traversing it are black ; tegmina and wings beneath almost same as above : head and thorax above greenish ; prothorax finely, transversely striated, a line, down the middle, shining : abdomen black, margins yellow, segments slightly powdered with white, vulvar scales red : legs brown, tibiae of hind legs tridentate on the outside (*White*). Exp. teg. 61 millims.

Reported from Silhat : the Indian Museum possesses specimens from Sikkim. Red : metanotum black : abdomen with a red transverse line at the base ; tip red beneath : tegmina with black spots along the costa and with some more or less interrupted and irregular black bands ; more than one-third of the apical part black with very numerous and regular black veins and veinlets : wings black, basal half red with several black spots ; a white middle band, not extending to the hind border (*A. placabilis*, Walker). Body long $16\frac{1}{2}$; teg. $54\frac{1}{2}$ millims. This is the reddish-brown variety.

36. LYCORMA PUNICEA, Hope.

Lystra punicea, Hope Trans. Linn. Soc. xix, p. 133, t. 12. f. 5 (1843) ; Walker, List Hom. B. M. ii, p. 286 (1851).

Aphæna delectabilis, Walker, l. c. Suppt. p. 44 (1858).

Lycorma punicea, Stål, Stettin Ent. Zeit. xxiv, p. 232 (1863).

Reddish purple, head and thorax paler ; basal half of tegmina tinted rosy and sprinkled with numerous black spots ; apex hyaline fuscous-puniceous with a pellucid mark in the middle of the disc : wings puniceous at the base, marked by black spots, whitish in the middle and fuscous-hyaline, at the apex (*Hope*). Long $12\frac{1}{2}$; exp. teg. 48 millims.

Ferruginous brown, black beneath : antennæ bright red ; pronotum dull green with some very minute, testaceous, brown-bordered spots : abdomen black : hind borders of the segments luteous on each side, beneath : legs black : tegmina black, whitish green with black spots for about one-third from the base, outline of the green part much excavated with some streaks same hue near it ; veins green : wings bright red with black spots, apical part blackish brown, divided from the red part by a bright greenish blue band which does not extend to the hind margin. (*A. delectabilis*, Walker). Body long, $12\frac{1}{2}$; exp. teg. 42 millims.

Reported from N. China, Shanghai, India, Silhat. The Indian Museum possesses a mutilated specimen from the Dikrang valley, Assam.

37. *LYCORMA IOLE*, Stål.

Lycorma iole, Stål, Stettin Ent. Zeit. xxiv, p. 234 (1863).

Blackish: the lateral posterior blotch on the vertex, thorax, lateral margins of scutellum, and the tegmina more or less purely green-olivaceous, the tegmina with 23-28 largish black spots, barely third apical part black, green-veined: wings coccineous with 8-10 black spots, black-fuscous behind the middle and there with a shortened band, virescent or cærulescent; anal valvules in ♀ sanguineous (*Stål*). ♀ long, 17; exp. teg. 52 millims.

Reported from India: closely allied to *L. delicatula*, White, larger, cephalic process less prominulous, and the spots on the tegmina and wings larger.

38. *LYCORMA DELICATULA*, White.

Aphana delicatula, White, A. M. N. H. xv, p. 37 (1845).

Aphæna delicatula, Walker, List. Hem. B. M. ii, p. 282 (1851).

Aphæna operosa, Walker, l. c. Suppt. p. 46 (1858).

Lycorma delicatula, Stål, Ofvers. K. V.-A. Förh. p. 485 (1852); Stettin Ent. Zeit. xxiv, p. 232 (1863).

Tegmina very pale greenish brown, basal part with many black spots (at least twenty) of which six on the anterior margin: the end darker brown, beautifully reticulated with pale greenish brown: wings at the base, vermilion red with largish black spots, irregular on either side (at least seven), tip widely black; a large acutely triangular sea-green mark on the fore-edge between the red and black parts: antennæ orange: head and thorax above of a pale brownish colour with a sort of bloom over them: body and legs blackish brown with a slight bloom (*White*). Exp. teg. 41 millims.

Reported from Nankin, Canton, China: very doubtfully from Sib-ságar (Assam). The cephalic process in this species is a little more elevated than in *L. imperialis*, White, to which it otherwise bears a strong resemblance: the black spots on the wings and tegmina also are smaller, the tegmina are palely olivaceous or whitish fawn-colour: the median band on the wings varies, as in all the others of this group, from whitish to cærulescent or virescent (*Stål*).

Genus *EUPHRIA*, Stål.

Stettin Ent. Zeit. xxiv, p. 232 (1863); part of *Aphæna*, Guérin.

Head furnished with a cephalic protuberance, very slender, acute, reflexed or erect; frons distinctly narrowed upwards, abruptly narrower at the base furnished with 2-3 ridges, a little elevated, parallel: vertex

very broadly sinuated at the base: thorax barely carinate in the middle: first femora slightly amplified at the apex above; last tibiæ 4-spinose; unarmed above at the base (*Stål*).

39. EUPHRIA AURANTIA, Hope.

Aphana aurantia, Hope, Trans. Linn. Soc. xviii, p. 443, t. 31, f. 2 (1841).

Euphria aurantia, Stål, Stettin Ent. Zeit. xxiv, p. 232 (1863).

Entire body above orange; tegmina sprinkled with barely visible yellow spots, posteriorly spotted black; a few minute spots on the internal margin and a very narrow border on the posterior margin, black: head excavated above, margins elevated; frons produced above the pronotum in a small, tapering, recurved horn: abdomen, at the base, covered with a white powdery substance; body beneath concolorous, a little more obscure (*Hope*). Long 19; exp. teg. 63 millims.

Reported from Assam; the Indian Museum possesses a specimen from Sikkim.

Fresh specimens have the tegmina green instead of orange, sprinkled with whitish powdery spots or patches, more distinct beneath: wings orange, body and abdomen orange yellow, in one specimen inclined to brown; feet (except posterior femora) in some greenish, in others concolorous with the abdomen, recurved horn in some green, in others orange. Also the apices of the tegmina are sometimes faded yellow more or less. A long series should supply the links. The Indian Museum has several specimens from Darjiling.

40. EUPHRIA SUBMACULATA, Westwood.

Aphæna submaculata, Westwood, Duncan's Nat. Lib. i. p. 284 t. 24, f. 1 (1840); Walker, List Hom. B. M. ii, p. 275 (1851).

Aphana resima, Stål, Ofvers. K. V.-A., Förh. p. 190 (1855).

Euphria submaculata, Stål, Stettin Ent. Zeit. xxiv, p. 232 (1863).

Sordid yellow-testaceous; frons with a cephalic protuberance or horn, twice as long as the vertex, channelled above, recurved: lateral margins of thorax narrowly black: scutellum obsoletely tricarinate: tegmina rufous-testaceous above densely spotted whitish-mouldy, costal spots subglaucous: wings nigro-fuscous, yellow-cinnamon beyond the middle, especially before the middle spotted whitish mouldy: abdomen above whitish-mouldy (*E. resima*, Stål). Body long 21; exp. teg. 71 millims.

Reported from India: the Indian Museum possesses specimens from Sikkim.

41. EUPHRIA LECTISSIMA, Walker.

Aphæna lectissima, Walker, List. Hom. B. M. Suppt. p. 45 (1858).

Grass-green: head with a short, acute, almost vertical horn; sides of the vertex carinate; frons and face flat, the latter with a slight ridge:

abdomen above testaceous: tegmina livid, red beneath, except towards the apex, adorned with many green, white-dotted, spots; border green, adorned with dots of white tomentum along the costa, and with black dots elsewhere, except towards the base of the inferior border where the dots are luteous: wings crimson for more than half the length from the base (*Walker*). Body long, 21: exp. teg. 33 millims.

Reported from N. India: the Indian Museum possesses a specimen from Sikkim. Closely allied to *E. amabilis*, Hope, from which it differs in the absence of the three fulvous spots on the pronotum and of the blackish lines on the mesonotum and posterior margins of the abdominal dorsal segments, and in the spots on the tegmina, which are small and circular, nowhere linear and transverse. Stål (*Ofvers. K. V.-A. Förh.* p. 486, 1862) unites the two species.

42. EUPHRIA AMABILIS, Hope.

Aphana amabilis, Hope, *Trans. Linn. Soc.* xix, p. 132, t. 12, f. 1 (1845); *Walker, List. Hom. B. M.* ii, p. 274 (1851).

Euphria amabilis, Stål, *Stettin Ent. Zeit.* xxiv, p. 232 (1863).

Body above orange; head green, furnished with an erect, acute, slender horn: prothorax green, marked by three fulvous spots: tegmina cretaceous sprinkled with numerous oval spots; wings coccineous, palely virescent at the apex: body beneath green; feet concolorous; pectus sprinkled over with a whitish down. The spots which above appear to be white and green intermixed are beneath entirely green (*Hope*). Long 25: exp. teg. 69 millims.

Reported from Silhat.

43. EUPHRIA AURORA, Hope.

Aphana aurora, Hope, *Trans. Linn. Soc.* xix, p. 133, t. 12, f. 2 (1845); *Walker, List. Hom. B. M.* ii, p. 275 (1851).

Euphria aurora, Stål, *Stettin Ent. Zeit.* xxiv, p. 232 (1863).

Allied to *E. aurantia*, but smaller; almost the whole body orange: tegmina externally barely virescent, internally orange and sprinkled with very minute whitish spots: body beneath concolorous: wings with cretaceous spots; last tibiae externally spinose (*Hope*). Body long, 19; exp. teg. 61 millims.

Reported from Silhat, Philippines.

44. EUPHRIA (P) WALKERI, n. sp.

Aphæna dives, var. (P), *Walker, List. Hom. B. M.* ii, p. 281 (1851).

Body yellowish brown, red beneath: vertex slightly ridged and furrowed: frons rather prominent, furnished with a slender, black, linear furrowed horn which is inclined backward nearly to the posterior margin

of the shield: rostrum ferruginous, tip darker, extending nearly to the tip of the abdomen: an excavation partly inclosing the eye on each side lateral margins of pronotum and most of metanotum, black: abdomen a little longer than the thorax, nearly elliptical, red, with a black band across each segment above: legs black, furrowed, femora red, posterior tibiæ spinose: tegmina not much longer than the wings, apex obtuse, pale dingy yellow with very numerous brown marks, reticulated part, yellowish-brown: wings brown with many almost colourless spots which are partly confluent, posterior margin almost colourless, tip pale brown (*Walker*). Body long $14\frac{1}{2}$; exp. teg. 42 millims.

Reported from India.

Genus PHORONIS, Stål.

Stettin Ent. Zeit. xxiv, p. 233 (1863).

Head not protuberant but emitting from the base of the frons a very long, very slender, mobile, reflexed process [which in dried specimens is very easily detached]; frons a little narrower above the middle than beneath the middle, abruptly narrowed at the base, furnished with two obtuse, parallel ridges (often obliterated), lateral margins slightly sinuate beneath the middle; vertex truncated at the base: thorax hardly carinate in the middle, first pair of femora distinctly amplified above at the apex: last pair of tibiæ 4-spinose, furnished above at the base with a tubercle (*Stål*).

45. PHORONIS NIGRO-MACULATA, Guérin.

Aphaena nigro-maculata, Guérin, Icon. Règne An. t. 90, f. 6 (1830-34); Voy. Bélanger Ind. Orient. Zool. p. 457 (1834); Spinola, A. S. E. F. (1 sér.) viii, p. 243 (1839); Walker, List. Hom. B. M. ii, p. 273 (1851).

Fulgora (Aphaena) nigro-maculata, G. R. Gray, Griffith's ed. An. King. Ins. ii, p. 260 t. 90, f. 6; t. 138, f. 1 a-c. (1832).

Aphana nigro-maculata, Westwood, Trans. Linn. Soc. xviii, p. 149 (1841).

Phoronis nigro-maculata, Stål, Stettin Ent. Zeit. xxiv, p. 233 (1863).

Head and thorax brown; horn black, short, flexible; tegmina brown with some small scattered black spots, exterior margin with a broad black border: wings with basal half silvery grey, spotted with black; other half, black, with the interior margin brownish black; body silvery grey, with transverse narrow bands of black (*Gray*). Head subferruginous, brown; frons with a cylindrical horn recurved backwards; thorax somewhat greenish brown: tegmina obscurely blue, apex finely reticulated with black, punctured with black on the anterior margin with five dots obliquely arranged at the base: wings blue, spotted with black, posteriorly brown, black at the apex: abdomen black, streaked

with white: body below and femora ruddy: coxæ brown (*Guérin*). Long 20; broad 55 millims.

Reported from China, Cochin-China: the Indian Museum possesses a specimen from the Andaman islands with the cephalic process absent.

46. PHORONIS PAULINIA, Signoret.

Aphaena paulinia, Signoret, A. S. E. F. (4 sér.) ii, p. 123; t. 1, f. 6, (1862).

Brick-red with the dorsum, femora, tips of tegmina, tip of the wings and several spots on them of a blackish-brown; on the anterior margin of the tegmina several black spots and a slight filiform, recurved cephalic process. Head broader than long, vertex square, a little transverse, with a transverse ridge and a fovea on each side of the eyes: frons convex, without a ridge on the anterior margin, a black filiform appendage, with a longitudinal groove, reaching almost the end of the mesonotum: rostrum of a reddish-brown, reaching the end of the abdomen, the third joint, the longest: pronotum almost five times broader than long, posterior margin concave, anterior convex with a median emargination which gives it a bilobed appearance, presenting on each side, beneath the eyes, a strong emargination: lateral margins convex and black, a slight ridge on the disc: mesonotum weakly tricarinate, and exhibiting towards its extremity two small brown dots. Tegmina with a broad apical band formed of a network of yellow veinlets on a brown ground; on the anterior margin are numbers of black dots, the claval vein near the fold of the tegmen with 3-5 black dots: wings transparent in the middle, slightly bluish and exhibiting there about a dozen more or less regular brownish spots; tip brownish; the border, also the folded part near the abdomen, slightly infusate: abdomen red beneath, black above, with the end of the segments and the lateral margins, red; each segment, especially those of the extremity, covered with a thick farinose substance: feet with the tibiæ red and the femora black, the posterior with three strong spines on the external side (*Sign.*) Body long, 16; exp. teg. 50 millims.

Reported from Cochin-China; the Indian Museum has a specimen (with the filiform cephalic process wanting) from Tenasserim. Stål unites this with *P. nigro-maculata*, *Guérin*, but though structurally the same, the coloration of the tegmina leaves no doubt as to specific identity.

Genus GEBENNA, Stål.

Trans. Ent. Soc. (3 sér.) i, p. 582 (1863); Hem. Afric. iv, p. 135 (1866).

Head broadish, narrower than the thorax, not protuberant; vertex transverse, anterior margin straight, posterior margin broadly sinuate; frons subquadrate, somewhat amplified on both sides at the clypeus, median area amplified upwards, broadly subtruncate at the apex, prominulous before the apical margin of the vertex, not reflexed; clypeus

ecarinate: second joint of antennæ transverse, produced upwards from the insertion. Thorax unicarinate in the middle, roundly produced at the apex behind the vertex: scutellum about half longer than the thorax. Tegmina barely amplified towards the apex, rounded at the apex, costal margin straight, longitudinal veins rarely furcate, small transverse veins remotely scattered throughout the entire tegmina: wings remotely transversely veined behind the middle. Feet simple, last tibiæ 4-spinose with their base neither spinose nor tuberculated (*Stål*). Allied to *Aphana*.

47. GEBENNA SYLVIA, Stål.

Gebenna Sylvia, Stål, Trans. Ent. Soc. (3 sér.) i, p. 582 (1863).

Palely grey-flavescent; frons, vertex and disc of thorax and scutellum minutely irrorated black; thorax and scutellum on both sides sprinkled with small black spots: tegmina weakly rufescent-ferruginous from the base beyond the middle, remotely sprinkled black, costal limbus palely olivaceous-virescent; apical part vitreous, sprinkled and spotted fuscous; wings vitreous, palely virescent towards the base, adorned with three irregular, large, subconfluent, black-fuscous spots, before the middle: dorsum of abdomen, black; segments margined olivaceous at the apex; abdomen adorned with four longitudinal rows of irregular grey-flavescent spots; ventral segments on both sides, spotted black, interruptedly banded black at the base: feet with numerous black bands (*Stål*). ♀, long, 13; exp. teg. 39 millims.

Reported from India. Vertex almost thrice as broad as the transverse eye, margins somewhat elevated: frons remotely and finely rugulose, slightly narrowed upwards: thorax less distinctly rugulose: scutellum finely rugulose on the disc.

Genus POLYDICTYA, Guérin.

Icon. Règne Anim. Texte Ins. p. 359 (1830-34); Stål, Hem. Afric. iv. p. 135 (1866).

Vertex about four times as broad as the eyes: entire tegmina densely or very densely reticulated: anterior tibiæ sometimes somewhat dilated: frons obtusely rounded at the base, amplified at the apex and distinctly broader than the clypeus, tegmina thrice or more than thrice longer than broad (*Stål*).

48. POLYDICTYA BASALIS, Guérin.

Polydictya basalis, Guérin, Icon. Règne Anim. Texte, Ins. p. 359 (1830-34); Walker, List. Hom. B. M. ii, p. 289 (1851); J. L. S. Zool. x, p. 98 (1867).

Aphæna uniformis, Walker, J. L. S. Zool. i, p. 144 (1857).

Eurybrachys basalis, Hope, Trans. Linn. Soc. xix, p. 134, t. 12, f. 6 (1845); Stål, Ofvers. K. V.-A. Förh. p. 500 (1862).

Fuscous yellow : head flavescent : thorax brunneous ; abdomen dull red ; tegmina fuscous, reticulated yellow ; wings at the base with a cærulean incurved line forwards, posteriorly subroseous ; remainder blackish (*Hope*). Body long, 21 ; exp. teg. 56 millims.

Reported from Sumatra, Silhat. There are at least two apparently undescribed species of this genus in the Indian Museum : one with a double incurved cærulean line at the base of the wings, abdomen vermillion with the dorsal segment more or less banded black, (body long, 16 : exp. teg. 46 millims), from the Andamans ; and one with the base of the wings red and base of the tegmina above and below with a bluish tinge, (body long, 19 : exp. teg. 53 millims), from Sikkim : but a series is desirable before describing them further.

49. POLYDICTYA (?) TRICOLOR, Westwood.

Lystra tricolor, Westwood, Arc. Ent. ii, p. 35, t. 37, f. 4 (1845).

Polydictya tricolor, Walker, List. Hom. B. M. ii, p. 290 (1851).

Sanguineous, very glabrous ; anterior lobe of pronotum and mesonotum anteriorly black, basal half of tegmina (the livid base itself excepted) stramineous, spotted black ; apical half brunneous ; costal spot stramineous : wings red, apical half fuscous : feet chestnut sanguineous (*West.*) Body long, 16½ : exp. teg. 56-57 millims.

Reported from Assam.

Genus ANCYRA, White.

A. M. N. H. xv, p. 34 (1845).

Allied to *Eurymela*, Hoff. ; but distinguished from it by the shape of the head which has not the dilated genæ, no stemmata, antennæ close under the eyes : tegmina finely veined, with a notch on the posterior margin and rounded at the apex, whence (in ♂) proceeds a longish narrow appendage, widest at the end : legs much dilated and compressed throughout : hind legs very long with four spines on the outer edge of the tibiæ : the end of the body covered with a waxy down-like secretion (*White*).

50. ANCYRA APPENDICULATA, White.

Ancyra appendiculata, White, A. M. N. H. xv, p. 34 (1845) ; Westwood, Cab. Or. Ent. p. 74, t. 31, f. 5 (1848) ; Walker, List. Hom. B. M. ii, p. 395 (1851) ; Dist. ant, J. A. S. xlviii (2), p. 38 (1879).

Rich deep brown : tegmina, above brown, spotted at base with white and with two widish powdery bands of white ; beneath, mahogany red : wings deep brown almost black on the edge and between a red-coloured space : body beneath yellow : legs black : wings more powdery

in the ♀ than in the ♂ (*White*). Long $9\frac{1}{2}$; exp. teg. excl. appendage 25 millims.

Reported from Maulmain: the Indian Museum possesses a specimen from Tenasserim.

51. ANCYRA HISTRIONICA, Stål.

Ancyra histrionica, Stål, Stettin Ent. Zeit. xxiv, p. 245 (1863).

Fuscous-ferruginous: frons yellow-ferruginous adorned with five subelevated, narrow, black bands: tegmina obscurely ferruginous, basal part and oblique band behind the middle, fuscous, apical callus black, apical appendage fuscous-ochraceous: abdomen flavescent (when alive sanguineous?), apex covered with a mouldy pubescence; feet blackish. Closely allied to preceding; tegmina, especially behind the middle, broader, apical appendage shorter, fuscous-ochraceous not black-fuscous, apical callus smaller, wings broader and their apical process shorter (*Stål*). ♀, long, 11; exp. teg. 26 millims.

Reported from Cambodia; the Indian Museum has a specimen from Pegu; but the desiccated body is only 8 millims long and the basal part and band behind the middle of the tegmina is lighter dull ferruginous, not fuscous.

CORRECTION.

C. maculicollis, Guérin, in J. A. S. LIII (II) p. 230, No. 76, is a synonym of *Tibicen brunneus*, Fabr., as follows:—

TIBICEN BRUNNEUS, Fabricius.

Tettigonia brunnea, Fabr., Ent. Syst. Suppt. p. 517 (1798); Syst. Rhyng. p. 43 (1803).

Cicada brunnea, Germar, Thon's Arch. ii (2) p. 6 (1830); Walker, List. Hom. B. M. i, p. 230 (1851).

Cicada maculicollis, Guérin, Voyage la Coquille, Zool. ii, p. 183 (1830); Walker, l. c. Suppt. p. 28 (1858).

T. (Abricta) brunneus, Stål, Hem. Afric. iv, p. 26 (1866).

Ferruginous or testaceous, paler beneath: apex of the scutellum and two very large spots on the thorax, ferruginous-flavescent, the latter with two fuscous streaks: head, a small posterior median spot and a transverse impression on the thorax towards the sides, blackish or fuscous-ferruginous; a spot on the lobes of the vertex, ferruginous: four triangular spots on the scutellum extended backwards from the base, fuscous; the median pair smaller, often obsolete; the lateral pair produced to a distance backwards: tegmina and wings sordid vitreous, veins testaceous-flavescent, fuscous towards the apex: head a little broader than the anterior part of the thorax: ocelli somewhat more

distant from the eyes than from each other: thorax gradually a little narrowed from the apex backwards beyond the middle (Stål). ♂, ♀, long, 21—24; exp. teg. 60—73 millims.

Reported from Mauritius, Bengal.

In J. A. S. B. LIV (II) p. 23 *Cosmopsaltria abdulla*, Distant, is recorded as a synonym of *C. spinosa*, Fabr. (l. c. LIII (II), p. 227): the following is Distant's description of *C. abdulla*.

♂. Body above castaneous, more or less covered with greyish pubescence and pilosity: head with the vertex somewhat sparingly pilose and the area of the ocelli, a little infusate: pronotum sparingly pubescent with a central x-shaped space denoted by striæ, followed by two oblique striæ, the outer one submarginal and slightly curved, lateral and posterior margins densely pubescent: mesonotum with two faintly indicated obovate spots on the anterior margin, sparingly pubescent, the lateral margins and the region of the cruciform basal elevation much more densely pubescent. Abdomen sparingly pubescent but much more densely so on the disc and the lateral margins: body beneath ochraceous: first and intermediate femora with the bases and apices fuscous, the central portion pale ochraceous: first tibiæ castaneous and tarsi piceous; intermediate tibiæ pale castaneous, with the base narrowly and the apex broadly piceous: last pair of legs pale castaneous, apices of femora, bases and apices of tibiæ, dark castaneous. Tegmina and wings pale hyaline; the former with the costal membrane and basal area, castaneous, claval area, piceous, transverse veins at bases of 2, 3, 5 apical areas infusate and a submarginal series of small fuscous spots at apices of longitudinal veins: wings with anterior claval margin and a curved basal streak dark castaneous. The face is very swollen and convex beneath, longitudinally furrowed and transversely striated: the rostrum extends just beyond the base of the femora: the opercula reach the base of the fourth abdominal segment; the outer margins are deeply narrowed and concave near the base and then become slightly convex to the apex which is broad and rounded, these opercula are very wide apart at the base and are confined to the lateral side of the under surface of the abdomen (*Dist.*).
